## Remarks/Arguments

Claims 10-15 are pending in the application. By this amendment, claims 10-12, 14, and 15 have been amended. Applicants believe the amendments made herein add no new matter.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based on prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to be attached thereto. Reconsideration and reexamination of the application is respectfully requested in view of the following remarks.

**Interview Summary**

The Applicants kindly thank Examiner Jennison for the telephonic interview with the Applicants' representatives on November 16, 2010. During the interview, Applicants' representatives discussed the differences between amended claims 10 and 14 and the cited prior art. No agreement regarding patentability was reached during the interview.

**Rejection Under 35 U.S.C. §101**

Claims 14 and 15 have been rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. The rejection is respectfully traversed.

Claim 14 has been rejected under 35 U.S.C. 101 as being directed to software per se. The Examiner contends that claim 14 fails to show transformation of a physical object, only the transmission and processing of a signal. Applicants have amended claim 14 to more expressly include elements that render the rejection moot. The method disclosed in amended claim 14 is now expressly tied to the machine. In all cases, it has been made clear that the machine, be it a controller or heating element of the machine are being manipulated and actuated as part of the process. For example, claim 14 now calls for the operating the heating element for the cooking interval to cook the food to the desired degree of cooking. Therefore, claim 14 is directed to statutory subject matter and the request the withdrawal of the rejection under 35 U.S.C. §101. Claim 15 depends from claim 14 and thus the 35 U.S.C. §101 rejection of claim 15 should be withdrawn for at least the same reasons as for the base claim.

**Rejection Under 35 U.S.C. §112**

Claims 14 and 15 have been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Examiner asserts that there is clear

indication that further experimentation is required to complete the invention because no steps on how to experimentally obtain values for the coefficients alpha and beta in the claimed formula are disclosed. The rejection is respectfully traversed.

The determination of the coefficients alpha and beta are easily within the skill of one of ordinary skill in the art. The coefficients alpha and beta are used in converting the sensor signal Y (Fig. 5) into the processed signal F(t) (Fig. 6). As can be seen, the data Ya and Yb may be obtained from the gas sensor for the corresponding times ta and tb. So, this information is known. The only unknown information are the two coefficients alpha and beta. The specification states that the processed signal F(t) is to reach its minimum during cooking and the gradient of the signal indicates the degree of cooking. (*Published Application para.* [0027])

Therefore, to determine the alpha and beta coefficients, one of ordinary skill in the art need only run two tests of cooking the same food type to the same desired degree of cooking, which would be determined by a thermometer in the well known and traditional manner, to have sufficient data to solve the equation F(t) for the two coefficients of alpha and beta. With the test data from the two tests, solving for alpha and beta is nothing more than solving two equations for two unknowns.

The running of the two tests and the solving of the two equations for two unknowns is well, extremely well, within the skill of one of ordinary skill in the art. In this art, one of ordinary skill in the art holds at least a bachelors degree in Engineering. Such a person is well versed on how to run such tests and how to use basic algebra to solve two equations to determine two unknowns.

The disclosure in the application, especially paragraphs [0025-0026], is more than enough for one of ordinary skill in the art to determine the values for alpha and beta, which would require nothing more than they everyday testing that engineers do.

It follows that, contrary to the Examiner's assertion, the specification indeed articulates in the description steps on how to experimentally obtain the data for alpha and beta as recited in claims 14 and 15 and, thereby, provides an enabling disclosure of the claimed subject matter. Therefore, for these reasons, the rejection must fail.

**Rejection Under 35 U.S.C. §103**

To establish a *prima facie* case of obviousness, several basic criteria must be met. Under *Graham v. John Deere, 383 U.S. 1 (1966)*, it is necessary to: (1) determine the scope and content of the prior art; (2) ascertain the differences between the prior art and the claims at issue; (3) resolve the level of ordinary skill in the pertinent art; and (4) evaluate evidence of secondary consideration. Additionally, the obviousness evaluation will be informed by a showing of teaching, suggestion, or motivation that would lead a person of ordinary skill in the art to combine the prior art to meet the claimed subject matter, although a rigid application of this showing is not required. The obviousness analysis must be explicit, and it is necessary to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. *KSR Int'l Co. v. Teleflex, Inc., 550 U.S. __; 127 S. Ct 1727; 82 U.S.P.Q.2d (BNA) 1385 (2007).*

Further, the Examiner must make out a *prima facie* case that a claim is obvious. An Examiner cannot establish a *prima facie* case that a claim is obvious "merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co v. Teleflex Inc. (KSR), 550 U.S. 398 418 (2007).* "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn, 44 F.3d 977, 988 (Fed. Cir. 2006).* "Hindsight" is inferred when the specific understanding or principal within the knowledge of one of ordinary skill in the art leading to the modification of the prior art in order to arrive at appellant's claimed invention has not been explained. *In re Rouffet, 149 F.3d 1350, 1358 (Fed. Cir. 1998).*

Claims 10-13 have been rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 4,335,293 to Kobayashi et al. in view of U.S. Patent No. 4,463,238 to Tanabe. The rejection is respectfully traversed.

Amended independent claim 10 calls for, in relevant part, a central processing unit configured to receive 1) the gas sensor signal, 2) the food type, and 3) the degree of cooking to control the operation of the heating element to cook the food for a cooking interval until the desired degree of cooking is reached, with the cooking interval being determined by filtering the signal from the gas sensor, with an amplitude of filtering depending on the type of food set by the user.

Kobayashi discloses a method for determining a cooking time of a food item in a microwave oven as a function of the type of food and the measured humidity. Kobayashi was fully described in the previous Response to the Office Action, and for purposes of brevity will not be repeated here.

Tanabe discloses a combined microwave and electric oven that utilizes a gas sensor located in an exhaustion duct for detecting the concentration of the gas exhausted from the oven cavity. The central processor 110 receives input from a key input unit 130, which includes menu selection switches 132 for selecting a desired menu to be cooked. The gas sensor 34 is associated with a comparator 340 for developing a determination output to be sent to the central processor unit 110.

Applicants respectfully traverse the combination of Kobayashi and Tanabe for several reasons. First, the Examiner bases the combination on an incorrect interpretation of Tanabe, which, as noted above, necessarily results in the Examiner failing to determine the scope and content of the prior art as required for a *prima facie* case of obviousness. The Examiner alleges that Tanabe teaches "a gas sensor 34 send a signal to a CPU 110 and would *filter* the signal based on the type of food input by the user at the menu selection 132" (*Office Action, pg. 4, emphasis added)*. However, Applicants assert that Tanabe makes no teaching of filtering of a signal. In fact, Applicants are unable to find the term "filter" (or any of its related forms) in Tanabe. At best, Tanabe teaches:

> "An output signal $V_x$ of the gas sensor 34 is applied to one input terminal of the comparator 340. The other input terminal of the comparator 340 is connected to receive a reference voltage signal derived from a variable resistor 342. The resistance value of the variable resistor 342 is determined in accordance with the cooking menu selected by the menu selection switches 132. When the output voltage signal $V_x$ reaches the level of the reference voltage signal derived from the variable resistor 342, the comparator 340 develops the determination output." (*Tanabe, col. 3, ln. 11-24*)

Tanabe simply sets a threshold resistance value (the reference voltage signal) and uses a comparator to compare the voltage signal acquired by the gas sensor to determine when the values are equal, thereby showing that the gas concentration has reached a preselected value. This is not the same as *filtering* the signal, as required by Applicants' claims. Applicants disclose obtaining the signal from the gas sensor 10 and then applying a filtering algorithm. "Good results have been achieved by applying a moving-window filter with an amplitude equal

to 30 samples. The amplitude of filtering depends on the food type being considered." (*Published Application, para. [0020]*) Further, the specific equation used for the filter can be referenced in Published Application, paragraph [0021].

The Examiner alleges that Kobayashi discloses all of the claimed subject matter with the exception of a CPU configured to receive and filter the signal from the gas sensor, with an amplitude of the filtering depending on the type of food set by the user. *Office Action, pg. 4.* Therefore, to the extent the rejection is based on Tanabe, the rejection fails to meet the *prima facie* standards because at least one of the references fails to teach the subject matter it was relied on in making the combination. Therefore, the requirement that the scope and content of the prior art be properly construed is not met by the rejection.

Assuming, *arguendo*, any combination of Kobayashi and Tanabe, however they might be combined, would fail to disclose a user setting the desired degree of cooking, and the central processing unit receiving the degree of cooking to control the operation of the heating element to cook the food for a cooking interval until the desired degree of cooking is reached. Neither Kobayashi nor Tanabe disclose a CPU receiving three inputs: 1) the gas sensor signal, 2) the food type, and 3) the degree of cooking, to control the operation of the oven. While Kobayashi and Tanabe may arguably be said to disclose receiving inputs from 1) the gas sensor signal and 2) the food type, Kobayashi and Tanabe do not disclose setting 3) the degree of cooking.

Because both Kobayashi and Tanabe, and the resulting combination, are silent regarding setting the desired degree of cooking, and therefore the central processing unit receiving the degree of cooking to control the operation of the heating element to cook the food for a cooking interval until the desired degree of cooking is reached, as set forth in amended claim 10, claim 10 cannot be obvious to one of ordinary skill in the art based on the combination of Kobayashi and Tanabe and the rejection must fail.

Therefore, claim 10 is patentable over the combination of Kobayashi and Tanabe. Claims 11-13, which ultimately depend from claim 10, are patentable for at least the same reasons as claim 10.

Claims 14 and 15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi in view of Tanabe, and further in view of U.S. Patent No. 6,538,240 to Shon et al. The rejection is respectfully traversed.

Shon discloses a method for determining a cooking time in a microwave oven based on a measured humidity. Shon was fully described in the previous Response to the Office Action, and for purposes of brevity will not be repeated here.

Amended claim 14 calls for, in relevant part, a method for automatic cooking comprising receiving as input to the central processing unit a setting of the desired degree of cooking of the food in the oven compartment and operating the heating element for the cooking interval to cook the food to the desired degree of cooking. Support for setting the desired degree of cooking can be found in paragraphs [0017] and [0027]-[0028] of the published application.

The addition of Shon to the underlying combination of Kobayashi and Tanabe does not remedy the shortcomings of the underlying combination with respect to amended claim 14. Specifically, Shon does not disclose setting the desired degree of cooking or controlling the operation of the oven based on the user set desired degree of cooking. Therefore, claim 14 is patentable over the combination of Kobayashi and Tanabe in view of Shon. Claim 15, which depends from claim 14, is patentable for at least the same reasons as claim 14.

**Conclusion**

Applicants submit that all of the claims remaining in the application are allowable over the prior art of record. Nevertheless, Applicants are filing a Request for Continued Examination contemporaneously herewith pursuant to 37 C.F.R. §1.114(c). Early notification of allowability is respectfully requested. If there are any remaining issues which the Examiner believes may be resolved in an interview, the Examiner is respectfully invited to contact the undersigned attorney.

Respectfully submitted,

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